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(54) Title: PROCESS FOR THE PRODUCTION OF ACETIC ACID

(57) Abstract: A process for the production of acetic acid which comprises carbonylating methanol and/or a reactive derivative thereof in one or more reactors in a liquid reaction composition comprising iridium carbonylation catalyst, ruthenium promoter, methyl iodide co-catalyst, methyl acetate, acetic acid and water. The liquid reaction composition from the one or more reactors is passed to one or more flash separation stages to form (i) a vapour fraction comprising condensable components and a low pressure off-gas comprising carbon monoxide and (ii) a liquid fraction comprising iridium carbonylation catalyst, ruthenium promoter and acetic acid solvent. The condensable components are separated from the low pressure off-gas. The concentration of carbon monoxide in the low pressure off-gas is maintained according to the formula:  $Y > mX + C$  wherein Y is the molar concentration of carbon monoxide in the low pressure off-gas, X is the concentration in ppm by weight of ruthenium in the liquid reaction composition, m is about 0.012 and C is about -8.7.

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